Monthly Progress Report
Corrective Measures Study (CMS) for Potential Release Site (PRS) 16-021(c)
December 2000

This report summarizes Los Alamos National Laboratory (LANL) activities completed during December of fiscal year (FY) 2001 on the CMS for PRS 16-021(c), the 260 outfall. Both the activities described in the CMS plan ([LA-UR-98-3918)], which was submitted to the New Mexico Environment Department-Hazardous Waste Bureau [NMED-HWB] on 9/30/98, and approved by NMED-HWB on 9/8/99), and other related activities are described herein.

Description of Activities and Contacts

High Performing Team (HPT) Activities – The 260 HPT met on December 4, 2000.

LANL representatives provided an update on baseline activities for the TA-16-260 CMS. Although the baseline has not yet been finalized, it was noted that several TA-16-260 activities had been impacted including the next deep well, the hydrogeologic studies, and waste disposal for the Interim Measure (IM). LANL representatives noted that they will attempt to maintain field work activities, but may cut back on data analysis activities this fiscal year. LANL also noted that existing data for ongoing studies would be evaluated in upcoming HPT meetings in order to determine whether significant value added for the CMS was being obtained from those studies.

LANL representatives provide an update on December activities including the hydrogeologic studies, the bench and pilot studies, and the IM investigations. Details are provided below in the sections of this report covering these studies.

Following data presentation, LANL representatives requested that several CMS studies be reduced in scope because they had achieved their goals or were not providing useful data: 1) It was requested that the bromide tracer sampling be halted, because no bromide breakthrough had been observed since 1997 and because IM data suggested that much of the bromide inventory had been removed during the IM; 2) It was requested that water samples no longer be analyzed for uranium and extended HE, because few (if any) detections of uranium above background or extended HE above the analytical detection limits had been found in the last two years; 3) It was requested that the frequency of alluvial well and spring water checking be reduced from weekly to bi-weekly or monthly. NMED asked than LANL provide a letter requesting these modifications to the CMS Plan.

LANL provided cost and schedule information on several waste disposal options for the IM, including both on-site and offsite options. NMED noted that Temporary Authorization (TA) for any on-site treatment options would probably require a permit modification. There was an extensive discussion of TA and other regulatory options for

on-site treatment. LANL personnel will discuss the likely costs of pursuing on-site treatment options. NMED personnel will continue discussions of TA internally.

LANL provided a draft IM Report outline. NMED will review this, and provide any comments on the format.

The next meeting is scheduled for Monday January 8, 2001. Agenda items will include evaluations of CMS data including stable isotope data, bench and pilot results, temporary authorization, and waste disposal options for the Interim Measure.

RCRA Facility Investigation (RFI) Report and CMS Plan– No new activities occurred during this reporting period.

Best Management Practices (BMPs)– BMPs are being inspected quarterly and following significant precipitation events inasmuch as fieldwork, including site restoration, is complete except for finalization of the zero-discharge dam. No BMP repairs were required this month.

CMS Hydrogeologic Investigations–CMS hydrogeologic investigations include ongoing Phase II RFI sampling as well as continuing investigations outlined in the CMS plan.

The ongoing Phase II RFI sampling program included collecting samples at Burning Ground, Sanitary Waste Consolidation System (SWSC) and Martin springs every other day for bromide, other anions, and stable isotopes. Data from the spring and well dataloggers was downloaded weekly. No new bromide breakthrough has been observed in samples to date. The flow in the springs and in Cañon de Valle decreased during December, following the peak in October that was due to the significant precipitation observed during that month.

The wells, both alluvial and deep, were checked weekly for both presence and level of water. All of the five alluvial wells in Canon de Valle and the three alluvial wells in Martin spring canyon contained water. The Canon de Valle hydrologic system appeared to be drying up following an October peak in saturation. Monthly and weekly flow-integrated samples were collected.

In December, two samples from precipitation events were collected and archived for analysis.

Site restoration and demobilization activities were completed at CdV-R-15-3.

Ecological Risk Pilot–

A draft plan for ecological data collection was completed.

CMS Bench and Pilot Studies–Bench and pilot studies continued in collaboration with the Innovative Treatment Remediation Demonstration (ITRD) Program. The ITRD HE

program is focused on two DOE sites: LANL and Pantex. Five studies are now ongoing under the auspices of ITRD, all of which may benefit the PRS 16-021(c) CMS:

1. A study of the passive barrier technology of Stormwater Management, Inc., which is potentially useful for removing HE and barium from waters.
2. A study of chemical treatment of HE-contaminated soil using zero-valent iron (ZVI). The LANL portion of this study has been completed.
3. A study of in situ anaerobic bioremediation of HE using gas-phase carbon additions.
4. A study of ex situ anaerobic bioremediation of HE-contaminated soils using the W. R. Grace process, which combines anaerobic bioremediation with a ZVI treatment. The LANL portion of this study has been completed.
5. A study of HE composting. Amendments appropriate to northern New Mexico were tested on both clean and contaminated soils. The LANL portion of this study has been completed.
6. A study of immobilization of barium-contaminated sediments from Cañon de Valle.
7. Phytoremediation studies in Cañon de Valle.

The HE-composting pilot study using clean and TA-16-260 soils was completed. HE levels in soils appear to have decreased significantly in all compost mixes, based on screening HE analyses. Laboratory HE samples were collected.

A revised engineering design for the Stormwater Management Pilot system was received form ITRD personnel.

***Interim Measure* (IM)** –

Activities at the TA-16-260 IM were limited. Site restoration activities are complete except for capping of the zero discharge dam. This activity will be completed following spring snow melt.

The field summary report was completed by the field work contractor.

Public and Stakeholder Involvement– No activities during this reporting period.

Percentage of CMS Completed

LANL estimates 70 % of the CMS has been completed to date. Note that this percentage does not reflect the deep wells that will be drilled per the CMS plan addendum.

Problems Encountered/Actions to Rectify Problems

General Problem (1) The Cerro Grande fire has severely impacted the 260 RFI/CMS activities. These problems have been discussed in detail in previous monthly reports.

Action to Rectify General Problem (1): LANL will work closely with NMED through the HPT to mitigate the effects of the Cerro Grande fire.

CMS Hydrogeologic Investigations

Problem (1): Questions relating to the quality of data from well R-25 remains a significant concern to the TA-16-260 team.

Action to Rectify Problem (1): LANL will evaluate the data from the quarterly sampling of the R-25 well to evaluate its reliability.

Problem (2) The autosamplers in the three springs have operated poorly since the Cerro Grande fire. There are frequent distributor-arm-fault interruptions causing the sampler to cease operation. In addition, spurious noise generated by the ultrasonic flow loggers continues to cause problems with accurately metering spring flow.

Action to Rectify Problem (2): The IT field team maintains the autosamplers as needed. These problems are currently handled during a sampling period by intensively managing the samplers manually. Solutions to the technical problems are being pursued.

CMS Bench and Pilot Studies

None.

IM

None.

Key Personnel Issues

None.

Projected Work for January 2001

RFI Report and CMS Plan

- No work is scheduled for this month.

BMPs

- Inspection of existing BMPs following significant precipitation events will continue.

CMS Hydrogeologic Investigations

- Maintenance of autosamplers
- Continued bromide sampling of springs

- Checking for levels and presence of water in alluvial and deep wells.
- Sampling of flow-integrated autosamplers
- Continued precipitation monitoring and sampling for stable isotopes.
- Data analysis
- Quarterly sampling at CdV-R-15-3
- Quarterly sampling of springs, seeps, and wells

Ecological Risk Pilot

- The ecorisk team will discuss the study plan for biota sampling in Canon de Valle with LANL personnel on the HPT.

CMS Bench and Pilot Studies

- Preparation for deployment of Stormwater Management units

IM

- Data analysis and preparation for completion of IM Report
- Waste management

Public and Stakeholder Involvement

No activities planned.